

REPLACEMENT ABSTRACT

Heat irradiation apparatus including: refractory flexible irradiation module including temperature resistant stopping means that avoid shadow zones and side losses of heat in the ceramic surface; refractory flexible ceramic plates having flexible pores which permit air/gas modulation defining the path of the air/gas mixture. When the flow pressure is reduced, part of the pore automatically closes and the combustible mixture is conducted to the surface. The fibers keep combustion active at the surface, multiplying IR heating effects. Ceramic plates of the art tend to "swallow" the flame, causing inner burning and reducing the efficiency of the process and/or loss of control of the flame and equipment explosion. Sensors and measuring means are provided for monitoring all steps. Thermal sensors are used as a safety device in the lower face of each flexible fibrous ceramic module for monitoring heat flow inversion due to external factors which cause "flame swallowing".